

SUPPORT FOR THE AMENDMENT

Support for the amendment of Claim 1 is found in Claim 4. Claim 4 is canceled.

Claims 2-3 and 5-9 are amended to use wording and structure consistent with U.S. patent law practice.

Support for the amendment of Claim 5 is found on page 4, line 27 and page 9, lines 12 to 15, in the specification.

Support for the amendment to Claims 8 and 9 is found on page 12, line 1, in the specification.

Claim 10 is new and is supported by original Claim 8.

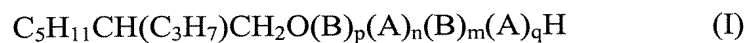
No new matter will be added to this application by entry of this amendment.

Upon entry of this amendment, Claims 1-3 and 5-10 are active.

REMARKS/ARGUMENTS

The claimed invention is directed to an alkoxyate mixture suitable for use as an emulsifying agent, a foam regulator and a wetting agent for hard surfaces. Such compositions are widely used in many multi-purpose formulations. Examples include detergents, humectants, cosmetics, pharmaceuticals, crop protection formulations and additives for building materials. In order to improve the performance of these formulations, materials having improved properties in wetting of hard surfaces, reduced foaming and surface tension are sought.

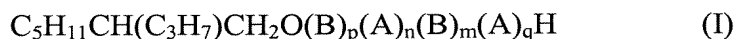
The claimed invention addresses this problem by providing an alkoxyate mixture comprising alkoxyates of the formula (I)



where A is ethyleneoxy, B is propyleneoxy and are present in the form of blocks in the stated sequence, p is a number from 0 to 5, n is a number from 0.25 to 10, m is a number from 2 to 10, q is a number from 1 to 5, from 85 to 96% by weight of alkoxylates A1, in which C<sub>5</sub>H<sub>11</sub> is n-C<sub>5</sub>H<sub>11</sub>, and from 4 to 15% by weight of alkoxylates A2, in which C<sub>5</sub>H<sub>11</sub> is C<sub>2</sub>H<sub>5</sub>CH(CH<sub>3</sub>)CH<sub>2</sub> and/or CH<sub>3</sub>CH(CH<sub>3</sub>)CH<sub>2</sub>CH<sub>2</sub>, are present in the mixture. No such composition is disclosed or suggested in the cited references.

The rejection of Claims 1-9 under 35 U.S.C. 102(a) over Ruland et al. (U.S. 2005/0170991) is respectfully traversed.

Ruland does not disclose or suggest an alkoxylate mixture of the formula (I)



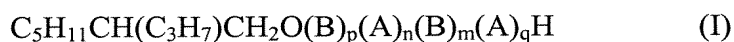
where A is ethyleneoxy, B is propyleneoxy and A and B are present in the form of blocks in the stated sequence, p is a number from 0 to 5, n is a number from 0.25 to 10, m is a number from 2 to 10, q is a number from 1 to 5, **comprising from 85 to 96% by weight of alkoxylates A1, in which C<sub>5</sub>H<sub>11</sub> is n-C<sub>5</sub>H<sub>11</sub>, and from 4 to 15% by weight of alkoxylates A2, in which C<sub>5</sub>H<sub>11</sub> is C<sub>2</sub>H<sub>5</sub>CH(CH<sub>3</sub>)CH<sub>2</sub> and/or CH<sub>3</sub>CH(CH<sub>3</sub>)CH<sub>2</sub>CH<sub>2</sub>.**

Ruland is directed to an alkoxylate mixture comprising at least one alkoxylate of formula (I), where the carbon chain ranges from 8 to 11 carbons, and at least one second alkoxylate of formula (II), where the carbon chain ranges from 12 to 24 carbons. The reference teaches that such “alkoxylate **mixtures derived from shorter chain and longer-chain alkanols** have significantly improved washing behavior . . .”[0025] (bold added).

In contrast, the claimed invention is directed to an alkoxylate mixture comprising **different isomeric structures of a C-10 alcohol only!**

Ruland actually teaches away from the claimed mixture by stating: “The improvement is particularly marked compared with the use of exclusively short-chain alkanol ethoxylates.” [0025]

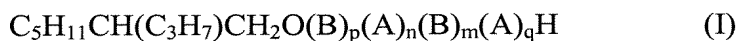
Applicants respectfully submit that as Ruland neither discloses nor suggests an alkoxyate mixture of the formula (I)



comprising from 85 to 96% by weight of alkoxyates A1, in which  $\text{C}_5\text{H}_{11}$  is  $n\text{-C}_5\text{H}_{11}$ , and from 4 to 15% by weight of alkoxyates A2, in which  $\text{C}_5\text{H}_{11}$  is  $\text{C}_2\text{H}_5\text{CH}(\text{CH}_3)\text{CH}_2$  and/or  $\text{CH}_3\text{CH}(\text{CH}_3)\text{CH}_2\text{CH}_2$  the reference can neither anticipate nor render obvious the claimed invention. Therefore, withdrawal of the rejection of Claims 1-9 under 35 U.S.C. 102(a) over Ruland et al. is respectfully requested.

The rejection of Claims 1-9 under 35 U.S.C. 103(a) over Dahlgren et al. (WO 94/11331) in view of Dahlgren et al. (WO 94/11330) and further in view of Clement et al. (WO 01/04183 A1) is respectfully traversed.

None of the cited references, when combined, disclose or suggest an alkoxyate mixture comprising alkoxyates of the formula (I)



where A is ethyleneoxy, B is propyleneoxy and are present in the form of blocks in the stated sequence, p is a number from 0 to 5, n is a number from 0.25 to 10, m is a number from 2 to 10, q is a number from 1 to 5, from 85 to 96% by weight of alkoxyates A1, in which  $\text{C}_5\text{H}_{11}$  is  $n\text{-C}_5\text{H}_{11}$ , and from 4 to 15% by weight of alkoxyates A2, in which  $\text{C}_5\text{H}_{11}$  is  $\text{C}_2\text{H}_5\text{CH}(\text{CH}_3)\text{CH}_2$  and/or  $\text{CH}_3\text{CH}(\text{CH}_3)\text{CH}_2\text{CH}_2$ , are present in the mixture.

Dahlgren(‘331) is directed to a process for cleaning hard surfaces with a detergent comprising an alkoxyate selected from the group consisting of

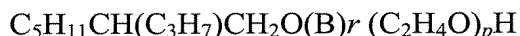


and



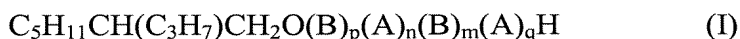
This reference is silent with respect to the alkoxylate being a mixture of isomers. It does not disclose or suggest that a mixture of isomers of alkoxylates of the same carbon number provides improved performance results. Moreover, the ('331) reference indicates that in "those cases where different alkyleneoxy groups are present in the same compound, they may be added **randomly or in block.**" (Page 2, lines 5-7)(Bold added) Blocks of 3 or 4 alkyleneoxy units in the specific order "(B)<sub>p</sub>(A)<sub>n</sub>(B)<sub>m</sub>(A)<sub>q</sub>" are neither disclosed nor suggested.

Dahlgren('330) is directed to an alkoxylate of the formula:



where "B" is an alkyleneoxy group having 3-4 carbon atoms. This reference is also silent with respect to the alkoxylate being a mixture of isomers. It does not disclose or suggest that a mixture of isomers of alkoxylates of the same carbon number provides improved performance results. Moreover, Blocks of 3 or 4 alkyleneoxy units in the specific order "(B)<sub>p</sub>(A)<sub>n</sub>(B)<sub>m</sub>(A)<sub>q</sub>" are neither disclosed nor suggested.

In contrast, the claimed invention is directed to an alkoxylate mixture comprising alkoxylates of the formula (I)



where **A is ethyleneoxy, B is propyleneoxy and are present in the form of blocks in the stated sequence**, p is a number from 0 to 5, n is a number from 0.25 to 10, m is a number from 2 to 10, q is a number from 1 to 5, **from 85 to 96% by weight of alkoxylates A1, in which C<sub>5</sub>H<sub>11</sub> is n-C<sub>5</sub>H<sub>11</sub>, and from 4 to 15% by weight of alkoxylates A2, in which C<sub>5</sub>H<sub>11</sub> is C<sub>2</sub>H<sub>5</sub>CH(CH<sub>3</sub>)CH<sub>2</sub> and/or CH<sub>3</sub>CH(CH<sub>3</sub>)CH<sub>2</sub>CH<sub>2</sub>.**

The Office has alleged that one of ordinary skill in the art at the time the invention was made would have found it obvious to arrange the C<sub>5</sub>H<sub>11</sub> portion in any manner or amount as desired, absent a showing of unexpected results.

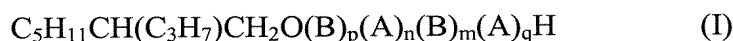
Applicants have discovered significant improvement of wetting property of an isomeric alkoxyate mixture relative to a pure isomer alkoxyate. As evidence of this improvement in wetting, Applicants enclose herewith the declaration of Mr. Markus Klumpe, an inventor of the above-identified application. Mr. Klumpe has conducted tests demonstrating an unexpected improvement in wetting of an isomeric mixture of alkoxyates relative to the corresponding pure isomer. The data is presented in the following Table:

Table

| <u>Example</u> | <u>EO#</u> | <u>Isomer Composition</u>                             | <u>Wetting</u> | <u>Foam</u><br><u>Capacity</u> | <u>Surface</u><br><u>Tension</u> |
|----------------|------------|---|----------------|--------------------------------|----------------------------------|
| 7a             | 3EO        | Pure 2-propylheptanol (2-pH)                          | 13 sec.        | 20ml                           | 26.8mN/m                         |
| 7b             | 3EO        | 90% 2-pH<br>10% 4-methyl-2-propylhexanol<br>(4-me-ph) | 12             | 20                             | 27.2                             |
| 8a             | 5EO        | Pure 2-pH   | 10             | 25                             | 27.1                             |
| 8b             | 5EO        | 90% 2-pH/10% 4-me-ph                                  | 9              | 30                             | 26.3                             |
| 9a             | 7EO        | Pure 2-pH   | 14             | 330                            | 27.8                             |
| 9b             | 7EO        | 90% 2-pH/10% 4-me-ph                                  | 13             | 350                            | 27.1                             |
| 10a            | 10EO       | Pure 2-pH   | 47             | 380                            | 30.5                             |
| 10b            | 10EO       | 90% 2-pH/10% 4-me-ph                                  | 40             | 370                            | 30.7                             |

As indicated in the Table, although in the properties of Foam and Surface Tension the pure alkoxyate and isomer mixture had similar values, unexpectedly the isomer mixture had improved wetting performance in every experiment. Thus Applicants have shown significant improvement that would not be expected by one of ordinary skill in the art.

Clement is cited to show a double metal cyanide catalyst. However, as Clement does not disclose or suggest an alkoxyate mixture comprising alkoxyates of the formula (I)



where **A is ethyleneoxy, B is propyleneoxy and are present in the form of blocks in the stated sequence**, p is a number from 0 to 5, n is a number from 0.25 to 10, m is a number from 2 to 10, q is a number from 1 to 5, **from 85 to 96% by weight of alkoxyates A1, in which C<sub>5</sub>H<sub>11</sub> is n-C<sub>5</sub>H<sub>11</sub>, and from 4 to 15% by weight of alkoxyates A2, in which C<sub>5</sub>H<sub>11</sub> is C<sub>2</sub>H<sub>5</sub>CH(CH<sub>3</sub>)CH<sub>2</sub> and/or CH<sub>3</sub>CH(CH<sub>3</sub>)CH<sub>2</sub>CH<sub>2</sub>**, the reference does not cure the basic deficiencies described for both Dahlgren ('331) and ('330).

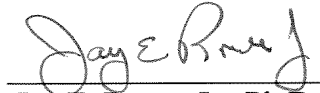
Therefore, Applicants respectfully submit that Dahlgren et al. (WO 94/11331) in view of Dahlgren et al. (WO 94/11330) and further in view of Clement et al. does not disclose or suggest the claimed invention and thus this combination of references cannot anticipate or render obvious the claimed invention. Withdrawal of the rejection of Claims 1-9 under 35 U.S.C. 103(a) over Dahlgren et al. (WO 94/11331) in view of Dahlgren et al. (WO 94/11330) and further in view of Clement et al. (WO 01/04183 A1) is respectfully requested.

Application No. 10/575,760  
Reply to Office Action of July 12, 2007

Applicants respectfully submit that the above-identified application is now in  
condition for allowance and early notice of such action is earnestly solicited.

Respectfully submitted,

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